CONFIDENTIAL

P.79B

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1 November 1957 25X1 25X1

1. Time and Place of Meeting - The meeting was held on October 22, 23, 24, 1957 at Cambridge, Massachusetts.

Attendance

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3. Discussion

2. P-163-B -

MEMORANDUM FOR: THE RECORD

: Visit to

SUBJECT

1. P-77 - The undersigned had hoped to check out and return with 10 RS-1 switch systems. This was not possible because difficulty had been encountered in low temperature operations. The receiver units operated satisfactory down to 40° F. where the battery ceased to be functional. They also continued to operate down to about 32° F. The undersigned informed the people at long as the unit satisfied the above requirements they would be acceptable for our uses. By the time of the undersigns departure, the temperature problem that existed had been solved and the people at check out the units and return with them to Washington.

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aware that all 10 transmitters and receivers should have been given final tests prior to the undersigns next vist, in order that he might

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The evaluation of the has been slowed up because we were trying to do it under adverse conditions. Since this condition has been clearified, progress will be forthcoming at a reasonable rate.

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was informed of the results or this summers tests on the nine units at Washington. From these tests it is concluded that the limiting factor in the operation of an ST-2A is the tube life that can be obtained from a 1AD4 sub-miniature tube. It has been decided that on the production ST-2A to be made, all efforts will be toward increasing the life of the lAD4. An increase in life can be obtained at a small sacrifice in power output. Some of the units have been giving up to 45 and 50 milli-watt output. These units appear to be good only for 1500 hours.

If we were to drop the power output to 30 milli watts and thus, operate the tubes at a more conservative figure.

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Subject:	Visit	to	

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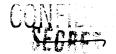
It is possible that we might double the life of the tubes. The undersisped, therefore, recommends that we set all ST-2A output at approximately 30 milli-vett sutput. The range we might loss in power output is far cut weighed by the longer life operation.

The manufacturer has already encountering trouble on the delivery date of the hard-to-get vital tantalum ospecitors. Using all pressure possible was able to get a verbal agreement to a delivery on December 15. Were this delivery made, everything would be satisfactory but past experience with this company shows that if the delivery were made by December 31, we should consider ourselves furturate. Therefore, the undersigned is going to make every effort possible to obtain more of a priority on the delivery of these items. Since his return from this trip the underedged has been in touch with of the Contract Brench and is looking into the possibility of obtaining these especitors from the Armed Services.

- Because of the

25X1 production contract of 100 ST-ZA's, there has been a relief in the pressure on the St-j. This will be the first time that an ST andt has been made that the field people were not depending on it to satisfy their operational needs. This relief in pressure allows us to try some minor variations which should bring about improved operation without running the risk of fouling up operations. Any of the changes that will be made will in general be minor and should have no drastic effect on the equipment. The following are some of the design goals that are being incorporated in the ST-j. The modulator will be a diode and will thus remove the effects of the aging of tubes upon the sodusting sensativity. In the ST-2A the capacity between the collecter and exitter was cast as the modustor. If the tubes aged, the value of this capacity changed as a function of the imput especity of the oscilator tube. The afore mentioned diode will eliminate this problem. By installing a diode in the feed back patch of the endic amplifier an AGC capability of up to about 60 db is expected to be possible. The diode charges the capacitor on gossitive peaks and thus, controls the bias of the first suite translator. The demonstration showed to the undereigned was the following. With the undersigned talking directly into the sucrephone at a distance of about 2" and about 9 ft. many talking in a soft voice, the maner- 25X1 signed was able to follow both sides of the conversation. Further details of this system will be forthcoming as the project progresses but at this time all indications are that we might have the ensuer to a long needed ACC system.





Memorandum for the record. Subject: Visit to 25X1 4. P-163-F finally received the contract for the BT-2 transmitters during the week of October 21. Since this is a four month contract, delivery of the units should be forthcoming in late February 1958. 5. P-79-B -25X1 The units that had been returned to had been found to have a 25X1 faulty connector. Since this was the only problem while they had the units, more tests were conducted. As a result of these tests it was shown that very little power was actually being coupled to the antenna. This situation has been rectified and the improvement can be shown in the following way. On earlier tests a few hundred was the maximum unable range, since the greater coupling has been brought about, the useful range has been increased to 800 yards. The units were carried to Washington by the undersigned and will undergo tests during the early part of November. 6. P-212 - Microphone Pre-emplifiers - The undersigned of the conditions under which the four pre-emplifiers 25X1 25X1 were to operate. s creating of the situation was turned over to Four pre-amplifiers capable of operating with the DD-4 mierophone will be ready for shipment on November 1, 1957. An extra unit is being made up for APD and snother for to retain. All of these units vill be potted to insure protection against exposure to weather. The microphone pre-amplifier contract for the Mp-3 was finally recieved by Baird during the latter part of the week of October 21. The undersigned is of the opinion that it is a three month contract and therefore delivery will be at the end of January. 7. P-193 - RT Transmitters - With the understanding that we do not want to spend a great deal of time developing a circuit for optimize, the Philoo High Frequency Transistors, the people at have been asked 25X1 to annalize the possibilities of installing some of these high frequency transistors in an RT-3 with the hope that by doing this we might have a medium powered all transistor FM transmitter giving 15 to 20

next visit to _____ Details, as to how many transmitter, and when, will 25X1

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milli watte at 55 to 60 megacycles. Since this is more or less a feasible study the result of it should be ready upon the undersigns

have to wait until the next visit.

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9. AN-43		
9. AH-H	- Carrier Current System	

that two of them may be operated on the same line at the same time vithout causing interference in the receiver. Seventy-five of the trememitters will be built with the Burnell filter incorporated in the some package. The remain twenty-five will have filters supplied in a separate package thus allowing more flexability for concealment. The Bornall filter almost completely elimates harmonic transmission and thus, detectability on standard AM broadcast receivers. From the checks made at West Out it appears that the 2 db insertion loss in the filter will not adversely effect the operational capability of the system.

The passive switch problem that was encountered at West Out namely that under certain conditions the transmitter could be turned on but not turned off, is solved when Burnell filter is used in the Transmitter. The reason is the following: when a transmitter without the filter is put on the line it loads the line at the switching frequency of 28 KC and therefore, sufficient power is not developed across the switch to activate it, however, when the Burnell filter is used since it is a bend-pass filter it blocks the 28 EC and the switch remains as sensative as before.

TOS/APD/EB

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Distribution

Orig. - P-77

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